

IN THE SPECIFICATION:

Page 1, after the title, insert the following topic headings.

BACKGROUND OF THE INVENTION

FIELD OF THE INVENTION

Page 1, line 9 to page 2, line 19, replace the paragraphs with the following amended paragraphs.

THE PRIOR ART

From ~~US-A~~ U.S. Patent No. 5,713,093 a pipe-cleaning device is known which comprises a cutting head for cutting away material on the interior of a pipe, a body on which the cutting head is rotatably mounted and drive means using a pressurized liquid for driving the rotation of the cutting head with respect to the body. The cutting head is made up of rigid cutting elements extending throughout the diameter of the device and the body is circumferentially provided with rigid guide runners means for supporting the body on the interior of the pipe to be cleaned.

The pipe-cleaning device known from ~~US-A~~ U.S. Patent No. 5,713,093 has the disadvantage that it cannot be moved past certain obstructions which may occur in the interior of pipes. An example of such an obstruction is a subsidence of one pipe section with respect to an adjacent pipe section, which is for example common in sewage pipes. With the prior art device, there is a risk that the device comes to a standstill at such obstructions.

The pipe-cleaning device known from ~~US-A~~ U.S. Patent No. 5,713,093 further has the disadvantage that the cutting head is unsuitable for cutting away large obstructions.

Another disadvantage of the pipe-cleaning device known from ~~US-A~~ U.S. Patent No. 5,713,093 is that the amount of torque which can be developed for cutting away material from the interior of the pipe remains limited.

It is a first aim of the present invention to provide a pipe-cleaning device with which the risk that the device comes to a standstill at obstructions can be reduced. ~~This aim is achieved according to a first aspect of the invention with the device showing the features of the characterising part of claim 1.~~

It is a second aim of the present invention to provide a cutting head for a pipe-cleaning device with improved cutting action. ~~This aim is achieved according to a second aspect of the invention with the cutting head showing the technical features of the characterising part of claim 6.~~

It is a third aim of the present invention to provide a drive for driving the rotation of a cutting head of a pipe-cleaning device with which the developed amount of torque can be increased. ~~This aim is achieved according to a third aspect of the invention with the drive showing the technical features of the characterising part of claim 12.~~

SUMMARY OF THE INVENTION

Page 7, between lines 28 and 29, insert the following topic heading.

BRIEF DESCRIPTION OF THE DRAWINGS

Page 8, between lines 6 and 7, insert the following topic heading:

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENT

Page 8, lines 16-25, replace the paragraph with the following amended paragraph.

The device 1 is provided with a drive for rotating the cutting head

2. The drive comprises a stator 3 and a rotor 4. ~~The~~ stator comprises a supply duct 100 which can be coupled to a supply hose (not shown) for supplying a pressurized drive liquid to the device. As shown in the figures, the supply duct 100 ends in two branches 101 which extend in opposite directions and end in nozzles 7 at the circumference of the stator 3.

3. The rotor 4 comprises a plurality of drive elements 5 or rotor blades, which are movable along a circular path around the circumference of the stator 3. Each of these drive elements 5 is provided with a drive plane 6 facing the stator 3.

Page 9, lines 23-31, replace the paragraph with the following amended paragraph.

The nozzles 7 are provided for directing the liquid streams in such directions P onto the drive elements 5[~~7~~] that they contact the drive planes 6 in a substantially perpendicular direction. To this end, the

nozzles 7 enclose an angle β of 45-90°, more particularly 60-80°, with the circular path along which the drive elements 5 rotate during operation.

The drive planes 6 enclose an angle α of 20-70 °, more particularly 30-60°, or 40-50°, with this circular path. In this way, the liquid streams generated by the stator 3 can impart a large force on the rotor 4, so that the developed torque can be maximized.

Page 12, lines 7 to 30, replace the paragraph with the following amended paragraph.

Each collapsible support element 30 comprises a wheel 31, an L-shaped arm 34 and a pull spring 33. The wheels 31 are mounted in a plane extending through the central axis H of the device 1, so substantially perpendicular to the pipe wall W. Each wheel 31 is rotatably mounted on its arm 34. The arm 34 is pivotally mounted on the body 111 and has a pivot axis 113 which is offset from the rotation axis of the wheel 31 in longitudinal direction of the device. This offset ensures that the support element 30 can collapse, by rotating the wheel 31 away from the pipe wall W when encountering an obstruction Q. For the front support elements 30 located at the cutting head 2, the offset is backwards, i.e., the rotation axis of the wheel 31 is behind the pivot axis 113. For the rear support elements 30, the offset is forwards. In this way, the movability of the device 1 in both forwards and backwards direction can be ensured. The pull spring 33, which extends in line with

the L-shaped arm on the opposite end of the pivot axis 113 with respect to the end on which the wheel 31 is mounted, is provided for pressing the wheel 31 back onto the pipe wall W past the obstruction Q. By this construction, the device 1 can easily be moved past a narrower part in the pipe, without losing the support on the pipe wall W: when one support element 30 collapses, its supporting function is temporarily taken over by the other support elements 30 of the array 112. The resiliency of the springs 33 is predetermined, for achieving that the supporting capacity of the whole array is sufficient for still supporting the body if at least one support element 30 is collapsed. As can be understood from Fig. 1, the support elements can also all collapse towards either the front end or the rear end of the device.